

**To:** Clark, Becki[Clark.Beki@epa.gov]; Kavlock, Robert[Kavlock.Robert@epa.gov]  
**Cc:** Grevatt, Peter[Grevatt.Peter@epa.gov]; Doyle, Elizabeth[Doyle.Elizabeth@epa.gov]; Burneson, Eric[Burneson.Eric@epa.gov]; Vandenberg, John[Vandenberg.John@epa.gov]; Cogliano, Vincent[cogliano.vincent@epa.gov]; Sayles, Gregory[Sayles.Gregory@epa.gov]  
**From:** Weis, Christopher (NIH/NIEHS) [E]  
**Sent:** Thur 1/23/2014 12:46:51 PM  
**Subject:** Re: Additional chemical was in Tank 396 with the MCHM that was leaked (Freedom

All, And especially J.V. For the tox summary and the REL. Your support is much appreciated.

Chris

On 1/22/14 5:49 PM, "Clark, Becki" <Clark.Beki@epa.gov> wrote:

>Chris,  
>I am sending with my blackberry, so please let me know if you can't read  
>it. I agree with John's summary.  
>  
>-----  
>From: Kavlock, Robert  
>Sent: Wednesday, January 22, 2014 4:11:03 PM  
>To: Clark, Becki; Sayles, Gregory  
>Cc: Kadeli, Lek; Vandenberg, John; Blackburn, Elizabeth  
>Subject: FW: Additional chemical was in Tank 396 with the MCHM that was  
>leaked (Freedom  
>  
>Becki/Greg  
>  
>Please find ORD comments on the hazards of PPH as prepared by NCEA staff  
>at your request.  
>  
>Bob  
>  
>  
>  
>-----Original Message-----  
>From: Vandenberg, John  
>Sent: Wednesday, January 22, 2014 12:58 PM  
>To: Kavlock, Robert  
>Cc: Cogliano, Vincent  
>Subject: FW: Additional chemical was in Tank 396 with the MCHM that was  
>leaked (Freedom  
>Importance: High  
>  
>Bob,  
>  
>Per our discussion:  
>  
>The two MSDS we received this morning indicate the material is propylene  
>glycol phenyl ether (DOWANOLTM PPH Glycol Ether) and a mixture of  
>dipropylene glycol phenyl ether (>=60%), propylene glycol phenyl ether  
>(<=25%), and polypropylene glycol phenyl ether (<=15%) (DOWANOLTM DiPPH

>Glycol Ether). I can't tell what mixture was actually released though  
>the Freedom Industries sheet indicates <sup>3</sup>5.6% in MCHM<sup>2</sup> (handwritten  
>notation, no identification of author).  
>  
>It appears the larger component of the DIPPH Glycol Ether (e.g.,  
>dipropylene glycol phenyl ether CAS#051730-94-0) is used in household  
>cleaning agents, though the percentage composition wasn't included:  
><http://householdproducts.nlm.nih.gov/cgi-bin/household/brands?tbl=brands&i>  
>d=18001634  
>  
>The MSDS include the statement for PPH Glycol Ether <sup>3</sup>Has caused birth  
>defects in laboratory animals only at doses toxic to the mother<sup>2</sup>. For  
>DiPPH Glycol Ether the statement is <sup>3</sup>Contains component(s) which caused  
>birth defects in laboratory animals only at doses toxic to the mother.<sup>2</sup>  
>I'd note that EPA's guidelines for developmental toxicity do not discount  
>findings of developmental toxicity in the presence of maternal toxicity.  
>  
>I looked for information via a simple internet search. I have not done a  
>thorough search for information but it appears there are several  
>unpublished studies available for some of these materials.  
>  
>Notably, the California Air Resources Board created a draft interim REL  
>in 2010 for propylene glycol phenyl ether. This is clipped from that  
>report (entire report attached).  
>  
><sup>3</sup>Reproductive and Developmental Toxicity BASF Corporation (2000,  
>unpublished report cited in OECD 2004) conducted a two-generation  
>toxicity test in which 0, 100, 1000, or 5000 ppm (0, 11.3, 113.9, 477.5  
>mg/kg bw/day) PPh were administered in the drinking water to two  
>generations of Wistar rats (25/sex/group) over an average of 26 weeks in  
>parental generations. First generation rats (F0) received PPh 77 days  
>prior to mating while the second parental generation (F1) received PPh  
>for their lifetimes until termination. F0 and F1 reproductive performance  
>were not affected at any dose. Estrous cycle, mating behavior,  
>conception, gestation, parturition, lactation and weaning, as well as  
>sperm parameters and sexual organ weights, and gross and  
>histopathological findings of these organs were similar between control  
>and treated animals. Signs of general systemic toxicity, characterized by  
>decreased water and food consumption and decreased body weight and body  
>weight gain were noted in F0 and F1 animals receiving the highest dose  
>although pathology and histopathology did not reveal substance-related  
>adverse effects. Pups of F0 and F1 parents receiving 5000 ppm PPh  
>exhibited signs of developmental toxicity in terms of reduced body weight  
>and body weight gain and delayed sexual maturation. NOAELs established in  
>this study are as follows: reproductive performance and fertility NOAEL =  
>5000 ppm for F0 and F1 parents; developmental toxicity NOAEL = 1000 ppm  
>for F1 and F2 progeny; general systemic toxicity NOAEL = 1000 ppm for F0  
>and F1 parents.  
>  
>The following study by Hellwig and Hildebrand (1995, cited in OECD 2004)  
>is in agreement with the BASF study above in demonstrating that PPh  
>confers developmental toxicity at high doses that also produce toxicity  
>in the dam.  
>Route of Exposure  
>Species, Dose/Exposure Levels  
>Oral (gavage)

>Himalayan rabbit  
>0, 60, 180, 540 mg/kg-d  
>Gestation days 7 through 19  
>  
>Results: Maternal Tox.  
>(NOAEL, LOAEL)  
>No effects at 0, 60, or 180  
>Decreased weight gain,  
>apathy at 540 mg/kg-d  
>NOAEL = 180 mg/kg-d  
>LOAEL = 540 mg/kg-d  
>  
>Results: Offspring  
>(NOAEL, LOAEL)  
>No effects at 0, 60, or 180  
>Increased skeletal variation  
>(13th rib) at 540 mg/kg-d  
>NOAEL = 180 mg/kg-d  
>LOAEL = 540 mg/kg-d  
>Table adapted from OECD 2004.<sup>2</sup>  
>  
>The NOAEL indicated from this CARB report for propylene glycol phenyl  
>ether is 180 mg/kg/day whereas the NOEL from the MCHM data was lower, at

## Ex. 5 - Deliberative

>  
>The other health effects are eye irritation and skin irritation, and  
>nausea if swallowed. I didn't find additional information about these  
>effects in my limited search.  
>  
>Please let me know if additional information is needed.  
>  
>John Vandenberg  
>  
>  
>  
>-----Original Message-----  
>From: Sayles, Gregory  
>Sent: Wednesday, January 22, 2014 9:17 AM  
>To: Vandenberg, John; Cogliano, Vincent  
>Cc: Kavlock, Robert; Trovato, Ramona; Kadeli, Lek; Clark, Becki;  
>Magnuson, Matthew  
>Subject: FW: Additional chemical was in Tank 396 with the MCHM that was  
>leaked (Freedom  
>Importance: High  
>  
>John, Vince - I spoke with Becki this morning. She is asking us for any  
>thoughts we have based on these on these attached documents (and see the  
>email string) - please send your comments to Becki and cc Chris Weis  
>ASAP. Becki may pull us together on a call later today to discuss. In  
>the meantime, I will ask Matthew Magnuson in NHSRC to look into treatment.  
>  
>Thanks  
>

>Greg  
>  
>  
>-----Original Message-----  
>From: Clark, Becki  
>Sent: Wednesday, January 22, 2014 8:14 AM  
>To: Sayles, Gregory  
>Subject: Fw: Additional chemical was in Tank 396 with the MCHM that was  
>leaked (Freedom  
>Importance: High  
>  
>Here it is with the attachments.  
>  
>-----  
>From: Weis, Christopher (NIH/NIEHS) [E] <christopher.weis@nih.gov>  
>Sent: Tuesday, January 21, 2014 6:29:43 PM  
>To: Clark, Becki  
>Subject: FW: Additional chemical was in Tank 396 with the MCHM that was  
>leaked (Freedom  
>  
>Becki,  
>  
>I thought you should see this emerging information from the Elk River  
>Spill. If you could share it with the EPA review team, I would  
>appreciate it.  
>  
>Thanks,  
>  
>Chris  
>  
>-----  
>Christopher P. Weis, Ph.D., DABT  
>Toxicology Liaison/Senior Advisor  
>Office of the Director  
>National Institutes of Health  
> National Institute for Environmental Health Science  
>31 Center Street, Room B1C02  
>Bethesda, MD 20892-2256  
>  
>PH: 301.496.3511  
>  
>  
>From: "Kapil, Vikas (CDC/ONDIEH/NCEH)" <vck3@cdc.gov<mailto:vck3@cdc.gov>>  
>Date: Tue, 21 Jan 2014 15:21:08 -0500  
>To: Christopher Weis  
><Christopher.Weis@NIH.gov<mailto:Christopher.Weis@NIH.gov>>  
>Subject: FW: Additional chemical was in Tank 396 with the MCHM that was  
>leaked (Freedom  
>  
>MSDSs attached\$.as discussed Chris. Please give me a call if you have  
>thoughts\$.note the LD50 and some comments on cancer info.  
>  
>Thanks again,  
>  
>Vik  
>  
>From: Werner, Lora S. (CDC epa.gov)

>Sent: Tuesday, January 21, 2014 11:10 AM  
>To: Helverson, Robert (CDC epa.gov); Markiewicz, Karl (EPA) (CDC  
>epa.gov); Cseh, Larry (ATSDR/DTHHS/OD); Kapil, Vikas (CDC/ONDIEH/NCEH);  
>Holler, James S. (Jim) (ATSDR/DTHHS/OD); Murray, Ed (ATSDR/DTHHS/OD);  
>Wheeler, John (ATSDR/DTHHS/OD); Welsh, Clement (ATSDR/DTHHS/OD)  
>Subject: Fw: Additional chemical was in Tank 396 with the MCHM that was  
>leaked (Freedom  
>  
>Please see below from EPA R3.  
>  
>Ed, can Larry and your group review the tox info on this additional  
>chemical for our internal purposes as soon as possible?  
>  
>We can discuss this at our 4 pm with Robin and determine how to discuss  
>with the state. I am sure at least their environmental state folks are  
>also aware of this now too, and we can expect the health folks to ask our  
>opinion soon is my guess.  
>  
>Lora  
>  
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>From: Linden, melissa  
>Sent: Tuesday, January 21, 2014 10:55:45 AM  
>To: Burns, Francis; Kelly, Jack (R3 Phila.); Werner, Lora  
>Subject: Additional chemical was in Tank 396 with the MCHM that was leaked  
>  
>  
>Good morning,  
>  
>  
>  
>  
>During the 10am meeting with Freedom Industries this morning we were told  
>that there was a mixture in Tank 396, instead of just MCHM. The mixture  
>was approximately 5.6% of the PPH which can be found in the attached MSDS  
>sheet from published by Freedom Industries. The PPH is a combination of  
>the two products from DOW which are also attached to this email.  
>Approximately 300 gallons of the PPH with 6251 gallons of MCHM for the  
>total release (including what is still in the soil and what made it to  
>the river).  
>  
>  
>  
>Thanks,  
>  
>Melissa Linden  
>  
>On-Scene Coordinator  
>  
>Western Response Branch (3HS32)  
>  
>Hazardous Site Cleanup Division  
>

>1060 Chapline St. Suite 401

>

>Wheeling, WV 26003

>

>Phone: 304-234-0251

>

>

>**Ex. 6 - Personal Privacy**@TechLawInc.com>>

>Sent: Tuesday, January 21, 2014 10:40 AM

>To: sharma, raj; Linden, melissa

>Subject: MSDS for PPH

>

>Hello,

>

>Attached, please find the three MSDS for the PPH.

>

>Thanks.

**Ex. 6 - Personal Privacy**

>Techlaw, Inc

>2208 Warwood Ave

>Wheeling, WV 26003

>**Ex. 6 - Personal Privacy**

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